

which permits two readings to be made with a very short time period between. An atmometer cup is mounted over a reservoir from which it may be cut off at will by means of a glass cock. It is also connected with a finely graduated burette from which the water will be drawn when the reservoir cock is closed. A reading can be made in a very short time at any desired intervals, and the average evaporating power for the period of observation can be calculated. Comparison of different environments is easily made.—CHARLES A. SHULL.

**Embryo sac of *Oenothera*.**—ISHIKAWA<sup>16</sup> has published a very full account of the behavior of the gametophytes and the fertilization phenomena in *Oenothera nutans* and *O. pycnocarpa*, as well as in their hybrids. These two species were formerly included in *O. biennis*. The embryo sac arises from either the chalazal or micropylar megaspore, and often both develop simultaneously into complete embryo sacs. The sac is tetranucleate, lacking the antipodals and one of the polar nuclei. In fertilization one of the male nuclei fuses with the remaining polar nucleus, resulting in diploid endosperm. Self-sterility of some of the hybrids is due to feeble growth of the pollen tube. Tetranucleate embryo sacs occur also in *Ludwigia*, *Gaura*, *Godetia*, and *Circaea*.—J. M. C.

**Iron in nutrient solutions.**—CORSON and BAKKE,<sup>17</sup> working upon wheat and Canada field peas, have studied the relative merits of ferrous and ferric phosphates in nutrient solution. They find that iron in the nutrient solution is more important than generally considered; that ferric phosphate is more effective than ferrous phosphate, especially for wheat; and that ferric phosphate in the concentration suggested by SHIVE (0.0044 grams per liter) gives maximum dry weight.—WM. CROCKER.

**Polyembryony.**—HARVEY,<sup>18</sup> in connection with recording a case of polyembryony in *Quercus alba*, has given a summary of the recorded cases of polyembryony in angiosperms. The list includes 36 cases, scattered through "15 of the 49 alliances." In the case of *Quercus* reported two vigorous embryos occurred in the acorn, and it is of special interest because this is said to be the first reported case of polyembryony "in the first 13 alliances of the Archichlamydeae."—J. M. C.

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<sup>16</sup> ISHIKAWA, M., Studies on the embryo sac and fertilization in *Oenothera*. Ann. Botany 32:277-317. pl. 7. figs. 14. 1918.

<sup>17</sup> CORSON, G. E., and BAKKE, A. L., The use of iron in nutrient solution for plants. Proc. Iowa Acad. Sci. 24:477-482. 1917.

<sup>18</sup> HARVEY, LEROY H., Polyembryony in *Quercus alba*. Mich. Acad. Sci. Rep. 1917. 329-331.